

AMENDMENTS TO THE DRAWINGS

A separate submission of Formal Drawings filed herewith contains a full set of replacement drawings (Figures 1 through 9E) including changes to Figures 6A, 6B, 7, 9B, 9C, 9D, and 9E to lighten them and make them more readable. No substantive amendments have been made to the figures.

REMARKS

Upon entry of this paper, claims 13, 30, 47, 65, 78, 79, 84, and 88 have been amended, no claims have been canceled, and no additional claims have been added as new claims. Thus, claims 1-93 are presently pending in this application. No new matter has been added.

Drawings

The drawings were objected to because Figures 6A, 6B, 7, 9B, 9C, 9D, and 9E were difficult to see. The drawings have been replaced with formal drawings in the Submission of Drawings being filed herewith. The replacement drawings provide additional clarity over those that were originally filed, without providing new matter. Accordingly, Applicant requests withdrawal of this objection.

Specification

The Specification was objected to because of the informalities noted in the Office Action with regard to format of the Abstract and also because of a typographical error in the Detailed Description. Amendments have been provided herein to address these informalities. Accordingly, Applicant requests withdrawal of these objections.

Claim Objections

Claims 13, 30, 47, 65, and 88 were objected to because of stylistic informalities as noted in the Office Action. Claims 13, 30, 47, 65, and 88 have been amended to address the stated informalities. Accordingly, Applicant requests withdrawal of these objections.

Claim Rejections – 35 USC § 112

Claims 78, 79, and 84 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention as detailed in the Office Action. Applicant has amended

claims 78, 79, and 84 to correct the antecedent basis by correcting a typographical error in the claim number from which each amended claim depends. Withdrawal of this rejection is requested.

Claim Rejections – 35 USC § 102

Claims 1, 12, 15-18, 32-35, 49-53, 64, 67-72, 75, 76, and 90-93

Claims 1, 12, 15-18, 32-35, 49-53, 64, 67-72, 75, 76, and 90-93 were rejected under 35 USC 102(b) as being anticipated by Bishop (“Modern Control Systems Analysis and Design Using Matlab and Simulink”, Addison-Wesley Logman, Inc., pages 1, 7-16, 95-102, 1997). Applicant respectfully traverses this rejection in view of the following remarks.

The Bishop reference is directed to the basic use of the Simulink® simulation software product provided by Applicant’s employer, The Mathworks, Inc. Applicant’s invention is based on an improvement of such simulation software. The sections referred to in the Office Action as being relevant to claims 1, 12, 15-18, 32-35, 49-53, 64, 67-72, 75, 76, and 90-93 are directed to a simple execution of a simple feedback and control system simulation. The novel and non-obvious invention described in the present claims goes well beyond the simulation described.

Turning to page 13, the paragraph beginning at line 24, the specification of the pending application clearly summarizes some of the differentiating characteristics of the present invention, where it states the following:

“More specifically, the present invention provides the user with the ability to better control, manipulate, view, review, and synchronize the collection of data in a dynamic system. Two or more data modules receive data outputs from the dynamic system and then forward, manipulate, review, and/or display the data. A central controller or a distributed plurality of controllers are provided to configure the data collection and display parameters as well as synchronize data collection as desired. It should be noted that the central or distributed controllers, and the data modules, are separate systems from the dynamic system being monitored or measured. The result is a coordinated data collection process that more effectively collects and controls data outputs generated by the dynamic system. The synchronized data modules can execute a plurality of different functions and operations, including suspending data collection and taking a momentary snapshot of collected data while data collection continues. Examples of data modules may

include virtual components or functions, physical instruments or devices, and parts of a model that collect and/or display data (such as a display of an input or output value). . .”

The pending claims require, “providing a control system having two or more data modules, the two or more data modules being communicatively coupled to receive data from the dynamic system model;” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). The section referred to in the Office Action that allegedly anticipates this portion of the claim is Figure 5.12. In the description for Figure 5.12, it states, “we can write certain parameters to the MATLAB workspace. Figure 5.12 shows two additions made to the original SIMULINK diagram so that the aircraft bank angle and simulation time are written to the workspace.” (*see* Bishop, page 100).

The “yout” and “tout” blocks in the dynamic system model of Figure 5.12 differ from the claimed invention in several different ways. The primary difference is that the “yout” and “tout” blocks are tasked with *sending information out* of the dynamic system model to a designated location (in the example 5.4.1, the location is the workspace). Said differently, the “yout” and “tout” blocks are one example of the mechanisms that may be used to identify data being generated as the dynamic system model is operating. According to one embodiment of the present invention, such mechanisms may be used to send that data to the “control system having two or more data modules” described in the claims, but in no way do they anticipate or render obvious the “control system having two or more data modules” itself. The “control system having two or more data modules, the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76) *receives* the data, which is patently different from sending the data from the dynamic system model.

In addition to the above distinction, the simulation described in Figure 5.12, and in Bishop generally, provides no description of “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Sending data to a remote location for storage is not actively “synchronizing data collection”. There is no control provided in the form of a “control system” that actively coordinates and

synchronizes the data collection by “yout” and “tout” as described and claimed in the present invention.

Absent a “control system having two or more data modules”, the modules being “communicatively coupled to receive data from the dynamic system model”, and/or the control system “synchronizing data collection by the two or more data collection modules”, there can be no anticipation of independent claims 1, 19, 36, 53, 73, 74, 75, and 76.

In light of the above comments, Applicant respectfully submits that the independent claims 1, 19, 36, 53, 73, 74, 75, and 76 of the present invention are not anticipated by, and are therefore in condition for allowance over, the cited document. In addition, a claims depending from said independent claims are allowable as being dependent from an allowable base claim in addition to their own individual claim characteristics as detailed in each claim. Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections – 35 USC § 103

Claims 2-4, 6, 7, 13, 19-21, 23, 24, 29, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82, and 88

Claims 2-4, 6, 7, 13, 19-21, 23, 24, 29, 30, 54-56, 58, 59, 65, 73, 77-79, 81, 82, and 88 were rejected under 35 USC 103(a) as being unpatentable over Bishop as applied to claims 1, 53 and 76, in view of Guiberson et al. (US Patent No.: 6,088,029). This obviousness rejection is respectfully traversed in view of the following comments.

Guiberson is generally directed to a real-time data display in a control window of a measurement instrument. The instrument receives real-time data corresponding to an application for display to a user. A control window is also displayed, including one or more user-selectable options within the control window and at least a portion of the real-time data within a portion of the control window. A user selection of an option to alter a display of the real-time data is then received, and the real-time data being displayed is altered within the portion of the control window in accordance with the user-selected option.

The combination of Bishop with Guiberson fails to render the claims obvious. Specifically, Bishop fails to teach or suggest “providing a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop further fails to teach or suggest “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76).

Guiberson fails to cure any of these above-noted deficiencies. Specifically, Guiberson was introduced in the Office Action for indicating a “frozen” screen feature. There is no teaching or suggestion of the provision of “a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Guiberson likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). The device in Guiberson simply receives a single data stream and has the ability to freeze a graphical image of the data stream on an oscilloscope. There is no indication of controlling two data modules, nor is there any indication of two data modules being communicatively coupled. Likewise, there is no indication in Guiberson of any “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). As such, Guiberson fails to teach or suggest any of the missing claimed characteristics from Bishop. The combination of Bishop with Guiberson, therefore, also fails to teach or suggest all claimed characteristics of any of the pending independent claims.

Furthermore, there is no suggestion in the documents to make the combination or modification suggested. There is no basis in the art for modifying the documents. The Office Action states a broad general motivation of “since Guiberson et al teaches an improved dialog box interface for measurement instruments that allows both the display of real-time data and the display of a control window, the control window including one or more user-selectable options and at least a portion of the real time data, therefore not covering up data by the control window which typically cover up a large portion of the measurement system’s display device, preventing the user from seeing his or her data in the underlying application (col. 1, lines 23-55).” (*see* OA, paragraph 26).

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). (see MPEP §2144).

The reason provided in the Office Action for combining falls short. Why would one of ordinary skill in the art look to Guiberson for a dialog box interface that provides for a display of real-time data and a control window? This is neither the stated object of the present claimed invention, or of Simulink® in Bishop, nor is it a problem that must be overcome. The present claimed invention, and the Simulink® version in Bishop, already provides multiple windows, and in fact can provide a substantial number more than just one window having a control displayed therein. There is no problem being solved by the present invention or Simulink®, nor is there a problem that requires solving in the present invention or Simulink®, that relates to the need for the creation of a control window for displaying data as described in Guiberson. Therefore, there is no motivation provided in Bishop to combine with Guiberson. Likewise, Guiberson provides no motivation for taking its control window from an oscilloscope, and duplicating such a window in a Simulink® environment, such as the version of Simulink® discussed in Bishop. Applicant requests reconsideration and withdrawal of this rejection.

Accordingly, Applicant submits that all independent claims 1, 19, 36, 53, 73, 74, 75, and 76 are allowable over the cited references. In addition, all claims depending from said independent claims are likewise allowable based on their dependencies on allowable base claims, in addition to their own claimed characteristics as detailed in each claim.

Claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85, and 89

Claims 5, 8-10, 14, 36, 42-44, 46, 48, 57, 60-62, 66, 74, 80, 83-85, and 89 were rejected under 35 USC 103(a) as being unpatentable over Bishop as applied to claims 1, 53, and 76, in

view of Mathworks (“Using Simulink, Version 2.2, January 1998, pages 4-1-4-20, 7-2, 7-8-7-14, 9-118-9-125, 9-146-9-152). This obviousness rejection is respectfully traversed in view of the following comments.

The combination of Bishop with Using Simulink, Version 2.2 fails to meet the characteristics of the claims. In other words, the documents do not teach or suggest every characteristic of the pending claims. Specifically, Bishop fails to teach or suggest “providing a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop further fails to teach or suggest “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76).

Using Simulink, Version 2.2 fails to cure any of these above-noted deficiencies. Specifically, there is no teaching or suggestion of the provision of “a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Using Simulink, Version 2.2 likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Likewise, there is no indication in Using Simulink, Version 2.2 of any “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). As such, Using Simulink, Version 2.2 fails to teach or suggest any of the missing claimed characteristics from Bishop. The combination of Bishop with Using Simulink, Version 2.2, therefore, also fails to teach or suggest all claimed characteristics of any of the pending independent claims. Applicant requests specific citations to sentences in Using Simulink, Version 2.2 that purportedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop with Using Simulink, Version 2.2 fails to meet all claimed characteristics.

Claims 11, 63, and 86

Claims 11, 63, and 86 were rejected under 35 USC 103(a) as being unpatentable over Bishop as applied to claims 1, 53, and 76, in view of Chen et al. (US Patent No.: 5,684,945). This obviousness rejection is respectfully traversed in view of the following comments.

The combination of Bishop with Chen fails to meet the characteristics of the claims. In other words, the documents do not teach or suggest every characteristic of the pending claims. Specifically, Bishop fails to teach or suggest “providing a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Bishop further fails to teach or suggest “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76).

Chen fails to cure any of these above-noted deficiencies. Specifically, there is no teaching or suggestion of the provision of “a control system having two or more data modules” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Chen likewise fails to teach or suggest “the two or more data modules being communicatively coupled to receive data from the dynamic system model” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Likewise, there is no indication in Chen of any “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). As such, Chen fails to teach or suggest any of the missing claimed characteristics from Bishop. The combination of Bishop with Chen, therefore, also fails to teach or suggest all claimed characteristics of any of the pending independent claims. Applicant requests specific citations to sentences in Chen that purportedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop with Chen fails to meet all claimed characteristics.

Claim 28

Claim 28 was rejected under 35 USC 103(a) as being unpatentable over Bishop and Guiberson et al. as applied to claim 19, and further in view of Chen et al. This obviousness rejection is respectfully traversed in view of the following comments.

As discussed previously, the combination of Bishop and Guiberson fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76 for the reasons stated. Additionally, Chen fails teach or suggest the claimed elements missing from the combined Bishop and Guiberson references, as discussed previously. Accordingly, the combination of Bishop, Guiberson, and Chen also fails to teach or suggest the claimed elements of “a control system having two or more data modules”, “the two or more data modules being communicatively coupled to receive data from the dynamic system model”, and/or “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Applicant requests specific citations to sentences in the cited references that allegedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop, Guiberson, and Chen fails to meet all claimed characteristics.

Claims 22, 25-27, and 31

Claims 22, 25-27, and 31 were rejected under 35 USC 103(a) as being unpatentable over Bishop and Guiberson et al. as applied to claim 19, and further in view of Mathworks. This obviousness rejection is respectfully traversed in view of the following comments.

As discussed previously, the combination of Bishop and Guiberson fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76 for the reasons stated. Additionally, Mathworks fails teach or suggest the claimed elements missing from the combined Bishop and Guiberson references, as discussed previously. Accordingly, the combination of Bishop, Guiberson, and Mathworks also fails to teach or suggest the claimed elements of “a control system having two or more data modules”, “the two or more data modules being communicatively coupled to receive data from the dynamic system model”, and/or

“synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Applicant requests specific citations to sentences in the cited references that allegedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop, Guiberson, and Mathworks fails to meet all claimed characteristics.

Claims 37-41, and 47

Claims 37-41, and 47 were rejected under 35 USC 103(a) as being unpatentable over Bishop and Mathworks as applied to claim 36, and further in view of Guiberson et al. This obviousness rejection is respectfully traversed in view of the following comments.

As discussed previously, the combination of Bishop and Guiberson fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76 for the reasons stated. Likewise any combination of Bishop, Mathworks, and Guiberson fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76. Specifically, all combinations of Bishop, Guiberson, and Mathworks fail to teach or suggest the claimed elements of “a control system having two or more data modules”, “the two or more data modules being communicatively coupled to receive data from the dynamic system model”, and/or “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Applicant requests specific citations to sentences in the cited references that allegedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop, Mathworks, and Guiberson fails to meet all claimed characteristics.

Claim 45

Claim 45 was rejected under 35 USC 103(a) as being unpatentable over Bishop and Mathworks as applied to claims 36, and further in view of Chen et al. This obviousness rejection is respectfully traversed in view of the following comments.

As discussed previously, the combination of Bishop and Mathworks fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76 for the reasons stated. Likewise any

combination of Bishop, Mathworks, and Chen fails to meet the characteristics of claims 1, 19, 36, 53, 73, 74, 75, and 76. Specifically, all combinations of Bishop, Mathworks, and Chen fail to teach or suggest the claimed elements of “a control system having two or more data modules”, “the two or more data modules being communicatively coupled to receive data from the dynamic system model”, and/or “synchronizing data collection by the two or more data collection modules using the control system” (*see* claims 1, 19, 36, 53, 73, 74, 75, and 76). Applicant requests specific citations to sentences in the cited references that allegedly teach or suggest the missing claimed characteristics. Otherwise, Applicant respectfully submits that the combination of Bishop, Mathworks, and Chen fails to meet all claimed characteristics.

35 USC § 103 Conclusion

Applicant therefore respectfully submits that all combinations, in the entirety or partially, of any two or more of Bishop, Mathworks, Guiberson, and Chen fails to teach or suggest every characteristic of Applicant’s claims 1, 19, 36, 53, 73, 74, 75, and 76. All dependent claims are also allowable based on their dependency on the aforementioned independent claims in addition to their own claimed characteristics. Applicant further submits that all pending claims of the present invention are not obvious with respect to, and are therefore allowable over, the cited documents. Reconsideration and withdrawal of all obviousness rejections is requested.

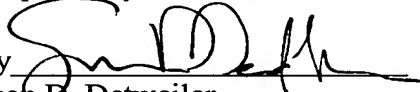
CONCLUSION

In view of the foregoing, it is respectfully submitted that this application is now in condition for allowance. Applicants courteously solicit allowance of the claims in the form of a Notice of Allowance. Each of Applicant's claims contains characteristics that are neither disclosed nor taught or suggested by the cited documents. For the reasons detailed herein, Applicant respectfully requests that all rejections be reconsidered and withdrawn. This application is in condition for allowance, and notice of the same is earnestly solicited. Should the Examiner have any questions, comments, or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact Applicant's representative by telephone at the number indicated below.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: October 5, 2006

Respectfully submitted,

By 

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